News of a Local Nature -  The Ottawa-Hull Timex-Sinclair User Group continues to
get together, this last September, 5 members meeting at a members home down by
the River (in what was at one time, cottage country). As one member remarked,
whether we continue to use Sinclair computers or not, we still get together to
enjoy talking to each other.  Some members have acquired IBM comaptibles, but
there is still quite a bit of use of the TS computers among group members,(incl-
uding those with other makes like the IBM compatible). The club librarian, Dave
Solly, 1545 Alta Vista Drive, Apt. 1402, Ottawa, Ont., Canada K1G 3P4 reported
that many, even from out of town are using the club BBS (613) 745-8838 (8/n/1,
300 and 1200 baud). Activity in programming in Pascal both on the TS2068 and
the IBM PC (using Turbo Pascal) is also a club activity that Dave participates
in and the BBS has had on it a Pascal compiler for the TS2068 that has been
released into the public domain for non-commercial purposes.  Coffee and goodies
rounded out the meeting which included discussion of proposals to raise rates
on phones using modems, (in the USA), copyright notices/mentions on run-time
modules and Mickey Spillane!

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Larken Electronics, original designers and makers of the ZX-81/TS1000 LDOS disk
controller/DOS and the LKDOS TS2068/Spectrum ROM compatible disk controller, and
DOS seem to be turning their attention to the sales of their modestly priced
computer controlled shaper/router/plotter that allows the working of plastic
and light metal by robot control using an ordinary IBM PC compatible running
a program originally written in Pascal on the TS2068. Continued support of the
disk systems, at least in terms of being able to buy new boards for new users
is now being considered, dependent on demand, as probably anyone who knows
about the Larken system and has a TS2068 has got one if they are going to now.
No matter what the outcome, conversion of the Aerco, Zebra and Oliger controll-
ers to run the LKDOS operating system and thereby read and write to LKDOS format
diskettes (which is now in progress all over the US judging from newsletters that
are coming from those user groups there), will guarantee a longer market and
opportunity for those who wish to convert to the LKDOS system over time.  The
software support of the LKDOS system will be handled ably by the Toronto user
group, as it is now, and possible further contributions from Larken Electronics.
The long-in-preparation book on the LDOS system for the ZX-81/TS1000 is being
releases in pre-publication form in chapters or sections by the author instead
of going the formal, publishing route (at TS Bulletin amateur publications ad-
dress above). This unofficial manual for the ZX-81/TS1000 single-density cont-
roller baord that Larken produced by modifying the software for the original
TS2068 LDOS controller has been in preparation for more than a year and has
about 110 pages or more.  Plans to publish it were abandonned due to the cost
of more than $40, but chapters or full copies have been circulating anyway even
though it is not finished.  -------
Congratulations to the Toronto Timex-Sinclair people for producing another mag-
nificent issue of their newsletter, which has been, the last couple of months,
the size and heft of a magazine. The Club there is  doing a fine job of sup-
porting the TS2068 and LKDOS disk system especially....The Hacker from Las Vegas
never fails to show up with a fine edition, and inspiration to other newslet-
ters in both appearance and amount of good material....In Canada a postal strike
is rumoured, but then that is always the way as Christmas approaches so it is
not to be taken seriously yet.  More than a rumour is the new G.S.T., a feder-
al retail sales tax in Canada which will be applied even to the postage of news-
letters from here.  The publisher of this newsletter is seriously considering
switching the publications to text files on disk (MS DOS ver.2.x, 360K, 5¼ in)
and just posting them to a BBS in order to avoid attracting too much in the
way of costs in the future when the G.S.T. comes in. (My TS1000 disk format is
not compatible with any other and ill suited for text anyway: LDOS single-dens-
ity.% I have found a way to make a disk LDOS/ZX-81 one-side, MS DOS the other.)

(Further to p.2) <u>Useful  Sinclair Programmer Notes (On Telephone Nos.)</u>

In the column "Amateur Programmers' Line" for this issue, mention was made of programming with primitives and simple building block algorithms made as the result of such work.  Below is a short listing of one version of a ZX-81/TS1000 program to test a way of compressing the RAM storage space that a 7-digit telephone number requires in a database.

```
                                           Comments
   1 REM                          (Here is where we will POKE
                                   the telephone no. into,
                                   starting at 16514 in the
                                   ZX-81/TS1000,
                                   fixed position.)
   5 REM Telephone numbers storage prog.*⊕
  10 POKE 16525,184               put last 3 digits in RAM
  20 POKE 16524,227               put middle 3 digits in RAM
  30 POKE 16523,8                 put first digit of no. in RAM
  40 REM This up to here will POKE the tel. no. into RAM
  50 PRINT "TEL.NO. ";
  60 FOR X=3 TO Ø STEP -1         This steps 3,2,1,0  -backwards
  80 PRINT PEEK(16525-X);         Print on screen the TEL. No.
  90 NEXT X                            (from RAM)
  99 STOP                         STOP at end of demo.
```

⊕* NoTE: THIS IS ONLY A FIRST TEST! (IS <u>NoT</u> USABLE IN A PROGRAM YET! SEE TEXT!)

This will store any seven  digit telephone number in 3 bytes of RAM, except (can you see the exceptions...?...think!)  The exceptions would be for example a byte  with leading zeros, including 822-1000, 800-1001.  The program also does not put in the "-" at the appropriate place.  One way to solve the leading zero problem would be to assign certain reserved codes for double zeros, but the problems are not too easy to surmount without variable length fields (allowed RAM bytes) for the telephone number.  Anyway, theoretically 3 bytes is better than 7 for using the standard alphanumeric code (similar to ASCI in the ZX-81) — one byte for each digit— even if you have to add another byte or two to get the case of leading zeros into your algorithm.  Another number that would not fit in 3 bytes but would require only 4 bytes to finalize would be 826-6257 since it would normally be broken down into 8, 266 (too high a number for the 255 limit of one-byte), and 257 (also too high for the 255 limit of one byte).  It would have to be broken up into 8, 26, 62, 57 and so require 4 bytes of RAM.

That leads to thought of other ways of handling it.  The simplest way numerically and for your conversion routines would be to allow for variable length fields.  This would normally create big problems with a database.  It also might waste an extra byte or two.  An end-of-field byte marker would of course have to be a different number (of the Ø to 255 that it is possible to store in one byte) than would ever occur as a code. If only one telephone number per record (for example, a person, member of a club in a club membership database), is used and there are other variable length fields, marked in ingenious ways for endings, or length, placing the telephone number at the end of the record would allow its end to be marked by the record end marker.  So we may have to reserve two codes not one to never use for the tel.no. bytes, end-of-no. (253) and end-of-rec. (254).

This is starting more and more to look like a typical coding problem, that of inventing a new code that will streamline computer operations, reduce even the space required to store data in RAM, and of course cover all possibilities in a logically consistent manner.  The zero case is one problem.  Perhaps it could be handled by not being greedy to get that extra digit (under 255)* in and settling for 2 digits per byte, with Ø coded as one zero and 200 coded as two zeros, the 2 being wiped out by the translation or display algorithm. 100 could remain as three digits, 1-00.

What if there is no phone number given or available?  How about a code other than 000-0000 for that?  In other words, an error code, non-exist code or a mathematically conceived empty set (null set) member code?  These possbilities for coding "nothing" are often overlooked in coding design.  We could assign 252 as this code for this system, where legitimate codes beyond 200 (or 252 to push it to the maximum ) would not print or be interpreted as phone numbers.  Then there are long distance numbers....

⊕* oR 253 is 253= end-of-no. 254 end-of-record, 255 EoF

Newsletters & Clubs:  The Vancouver TSUG (or rather VSUG) is having a little
difficulty in getting material for the newsletter (hint for those who would like
to send them something, including a program on cassette for listing).  It will
be prepared by a new editor as of the next issue.  It has been a good source of
hardware articles and machine code articles for the ZX-81 in particular for the
last couple of years.  Wilf Rigter, the originator of a system of high resolution
graphics for the ZX-81 has written articles for it on how to fiddle with the
operating system parameters to get specialized graphics and multi-tasking (the
NOVA 1000 program) with the ZX-81.  General news and material on the TS2068 have
also graced its pages, as well as the schematics for many projects, especially
those for the ZX-81 which most folk would have less trepidation in taking apart
and hacking..... Larry Kenny of Larken Electronics has put out a call for all
who wish to order LKDOS interfaces to speak now or hold their peace (forever?),
so that he can judge by orders to RMG Enterprises or himself whether there is
enough demand to get another, minumum order of at least 35 p.c. boards manufact-
ured (by an outside company specializing in pc board etching)in order to make
up more LKDOS controller boards for the TS2068/Spectrum ROM TS2068.  Larken
Electronics is at RR#2, Navan, Ont. Canada K4B 1H9 and R.M.G. is at 1419½ 7th St.,
Oregon City, OR, USA 97045 (tel. 503-655-7484).....A few of our readers may have
heard of the excellent newsletter for the QL put out in French by Real Gagnon.
He has written an article for the Toronto TSUG (or rather Club) that helps ex-
plain his suspension of publication (temporarily?) of that newsletter, QL_DOC,
due to job problems. . in the winter when his employer went out of business. We
can hope that time and finances will permit its re-establishment soon.....The
Johnson City, NY (a high tech centre) TSUG, SINCUS has moved to embrace the IBM
PC compatible world and also to discontinue publication of its newsletter as of
this summer.  If you are not getting any more newsletters from them, that is the
reason.....Update Magzine, a T/S based quarterly supporting aftermarket disk sys-
tems, especially those for the TS2068 has changed hands.  The previous publisher,
Mr. Jones is taking a holiday and going cruising around in the Florida area ocean
and Frank Davis of Indiana TSUG is taking it over.  Expectations of further ex-
cellent issues coming forth have been expressed by people who know Frank.  For
subscriptions contact at tel. (317)473-8031 or via ISTUG,513 E.Main.,Peru,IN46970.
.....EMsoft, the QL software firm at P.O. Box 8763, Boston,MA,USA 02114-8763,
tel617-889-0830 is offering, a free catalogue and also has some things other than
QL software including a ZX-81/TS1000/TS1500/TS2068 expansion bus connector and
housing  (also works with PC8300 but with TS2068 connects only to a subset of the
bus connections, like the TS printers) for US$16 for 3 (or two for the same price)
and a collection of documentation for the ZX/TS computers, Syntax, etc. for $30.
(from an advert in SMUG, Sept.1990).....If you are wondering about how old your
addresses are for a number of groups etc., and whether thay are any good, look at
the following new addresses:  Toronto TSUG (changed last year), c/o Geo. Chambers,
14 Richome Ct.,Scarborough, Ont., Canada M1K 2Y1 (subscription to n/l $12-m.o)....
SINCUS, Johnson City-discontinued N/L, Harrisburg, PA gp. folded, Dallas & Ft.
Worth Gps., discontinued n/l but last heard they were attempting to start one up
again,QL_DOC, Montreal, suspended publ., contact Real Gagnon via Toronto TSUG,....
T/S SIG of Boston Computer Soc. folded but reincarnated as New England QL Users' Gp.
P.O. Box 8763, Boston,MA,USA 02114-8763 Sum.1990....CRAGIST n/l renamed and now
published from new address of Donald Lambert, 1301 Kiblinger Pl.,Auburn,IN,USA
46706 (Sept.1990 chg. of address), CATS (National Capital TSUG), new address,(fall
1990), CATS,POB 11017,Takoma Park,MD,USA 20913.....Quanta Library, c/o Paul Holmgren,
5231 Wilton Wood Ct.,Indianapolis, IN.USA 46254 -program library/source code....
TS Bulletin Amateur Publications still going strong (in 4th year of publication),
with many back issues still available for postage from 97 Ruskin St.,Ottawa,Can.K1Y4B3
Suppliers: American Micro Systems,2175 Aborn Rd. #262,San Jose,CA,USA95121 -QL,...
John McMichael,1710 Palmer Dr., Laramie,Wy,USA82070-TS2068 printer drivers-Oki,...
................:...Byte Power-TS2068-software & mag.,1748 Meadowview,Pickering,Ont,,
Canada,L1V 3G8....Indiv.Users with a Spec. Interest-TS2068/MS DOS Pascal,D.Solly,
1545 Alta Vista#1402,Ottawa,K1G 3N4TS2068 music, Joan Kealy,POB 1118,Brackettsville,X
USA 78832,hardware/ic tester w.TS2068,N.Pashtoon c/o CATS,& Bob Swoger, DOS/OS exten-
sions for TS2068/LKDOS-CATS,613 Parkside Circle,Streamwood,IL,USA 60107....